DECEMBER 1956

FIREMEN

SIXTY-FIRST YEAR • NATIONAL FIRE PROTECTION ASSOCIATION

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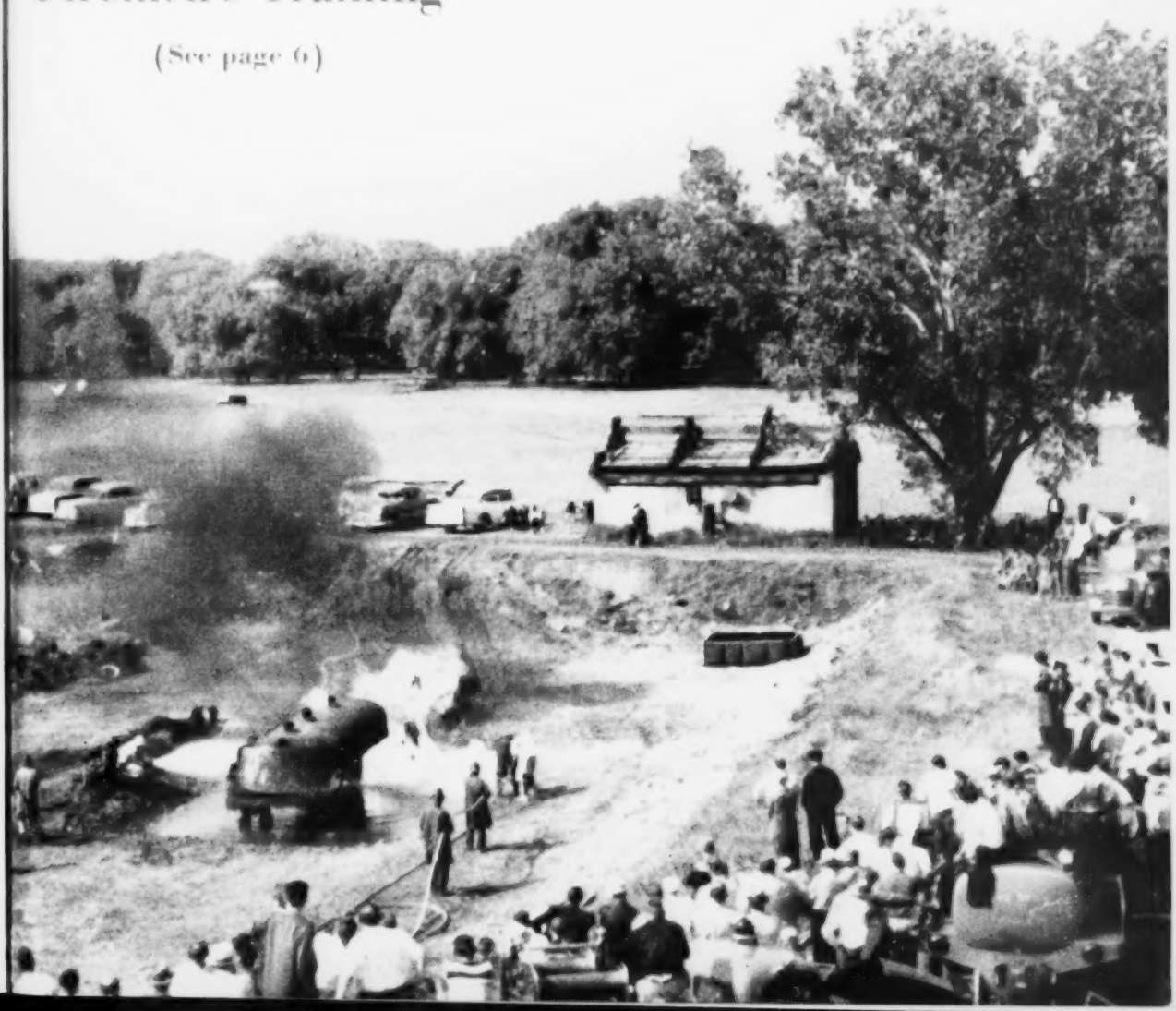
Annual Survey of State and Provincial Firemen's Training

(See page 6)



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SWITCHES

SMALL MOTORS

An Important Notice!

EFFECTIVE February 1, 1957, the subscription price for FIREMEN magazine will be raised to $2.00 per year. Fire departments which retain membership in NFPA will only receive four free subscriptions to the magazine instead of the six free subscriptions granted in previous years. Otherwise, the NFPA membership dues will remain the same.

Despite a continual increase in printing and production costs of the magazine, the NFPA has held the subscription price to $1.25 per year since September 1949. However, in the intervening period, circulation of the magazine has climbed steadily until at the present time it is now close to 30,000 per month. This, coupled with increased costs of printing, engraving, and paper, necessitates changes in the pricing and distribution of the magazine.

For the benefit of all readers the new plan is detailed below. Every municipal paid, call, or volunteer fire department which takes membership in NFPA is entitled to the following:

Four yearly subscriptions to FIREMEN magazine.

A single subscription to the NFPA *Quarterly*.

A single subscription to the NFPA *Fire News*, plus special promotion kits for Spring Clean-Up and Fire Prevention Week activities. Member fire departments are also sent all of the other posters, bulletins, and publications distributed to Associate Members of NFPA.

If more than four subscriptions to FIREMEN are wanted, then each additional subscription costs only $2.00 per year. Such subscriptions must be obtained when a fire department joins NFPA or renews its membership.

Members of the uniformed fire service who take individual membership in this Association are entitled to receive one free subscription to FIREMEN magazine through that membership, in addition to the other publications mentioned above.

"Free copy" distribution is limited only to members of the uniformed fire service and to municipal fire departments. Fire brigades at industrial and governmental installations pay $2.00 for each subscription to the magazine in addition to the regular NFPA membership dues.

While the new price and distribution plan is scheduled to go into effect February 1, 1957, there will be no increase in the present accounts of NFPA member fire departments until their membership is scheduled for renewal. At that time, the NFPA Executive Office will send a new application blank which will explain the total subscription and membership costs.

Firemen

Volume 23 — Number 12

WARREN Y. KIMBALL, EDITOR
PAUL R. LYONS, ASSOCIATE EDITOR
HENRY S. GERE, ADVERTISING MANAGER

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PERCY BUGBEE	GENERAL MANAGER
ROBERT S. MOULTON	TECHNICAL SECRETARY
HORATIO BOND	CHIEF ENGINEER
CHARLES S. MORGAN	ASSISTANT GENERAL MANAGER
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Cover Picture

This month's cover shows action during a training session on flammable liquids fires at Iowa State University during the past year. This is but one of the training schools which fire fighters throughout the United States and Canada attended to improve their various skills and techniques of fire combat. The Annual Survey of State and Provincial Firemen's Training, on pages 6 through 9 of this issue, reports the variety of training activities made available to more than 100,000 fire fighters who took advantage of the instructional programs available through their respective States and Provinces.

This year's survey indicates that greater variety is being incorporated in the various programs. In addition, through the use of traveling instructors and through zone and regional fire schools, the States and Provinces are broadening their coverage of fire departments. Most training programs and fire school activities include practical fire problems which necessitate skilled operations by the fire fighters. Structural fires, flammable liquids fires, and aircraft crash fires are but a few of the numerous training exercises developed to provide thorough training. Still, as reported in the survey, there is a strong demand from many areas for bigger and more complex fire fighting problems. There is a tremendous interest in "learning by doing" among members of the fire service. Such interest is shown by the "rookies" who are learning the basic hose and ladder evolutions, and by the top ranking officers who participate in the numerous officer training courses held in the United States and Canada. The fire service will continue to benefit from this universal desire for improvement which seems more apparent in each annual summary of the firemen's training programs.

Automotive Progress

Automatic transmissions in place of manual "gear shifting" has become so commonplace as to almost be considered standard equipment for cars and trucks, although fire apparatus employ transmissions requiring manual shifting. Many individual fire fighters drive private automobiles with automatic transmissions and thus may be more familiar with this type of vehicle operation than with fire apparatus or other vehicles having manually operated transmissions. Because many pieces of fire apparatus are built on commercial chassis it is necessary to look forward to the time, perhaps not too far distant, when fire apparatus will have automatic transmissions.

This obviously presents some engineering problems, especially where pumping engines are concerned, but engineers are already at work adapting automatic transmissions to fire service apparatus. At the IAFC Convention in Miami in November, one manufacturer demonstrated a 750 gpm pumping engine using an automatic transmission for driving both the rear axle and the pump. Admittedly, this was an experimental model built to gain practical experience, but it is reported that several large departments are planning to acquire apparatus with automatic transmissions during 1957. However, it is probable that the volunteer departments will be among the first to adopt such apparatus because they have the problem of training more apparatus drivers per unit and because it is likely that at first it will be more practical and economical to furnish such equipment with 500 and 750 gpm pumpers than with the heavier apparatus commonly found in large cities.

One caution is in order. As with any other motor fire apparatus, purchasers should make certain that regardless of the type of transmission, all apparatus should meet the NFPA-IAFC Standards, that the model selected has passed the National Board of Fire Underwriters' 12-hour test and that the individual pumping apparatus is required to meet the underwriters' 3-hour acceptance test upon delivery.

*

Put Fire Safety at the Top of Your Christmas List

State and Provincial Firemen's Training — 1956

By Paul R. Lyons, Associate Editor

ONE attribute highly cherished in the fire service, but too seldom praised, is skill. Skill in carrying out the simplest evolution or the toughest command assignment, skill in working with, instructing, or commanding men, skill in protecting a rather indifferent public — all of these are inherent in some individuals in the fire service.

More significant is the continual desire for skill which seems almost universal in the fire service. Certainly this year's survey of firemen's training in the United States and Canada shows that a great many fire fighters want to improve their skills. Their demands for training and special education are causing a broadening of training programs in the States and Provinces. They are asking for more variety in training subjects, for new fire schools, for new and better techniques in fire combat. And their demands are being filled as quickly as possible. But apparently the desire for "skill" will never be satisfied.

To analyze the status of firemen's training, the editors of FIREMEN magazine surveyed the various Departments of Vocational Education, fire marshals and fire chiefs who have responsibility in conducting the State and Provincial firemen's training programs. The reported total of 115,786 men who took part in these programs does not include thousands of other fire fighters who received training in fire departments, counties, organizations, and in schools or annual meetings conducted by state fire chiefs' and firemen's associations. Where names of States or Provinces are mentioned below, the reference is to the training program conducted with the assistance of the vocational education offices.

This year we again present this survey in the form of "subject analysis," since it provides a convenient method of emphasizing the trends. Limited space prevents adequate descriptions of the individual schools or training programs. For example, since basic hose and ladder evolutions are incorporated in every training program, it does not seem necessary to stress the extent of this training. Similarly, a number of the programs included the training of industrial and institutional fire brigade personnel as well as the municipal paid, call and volunteer fire fighters.

We are indebted to the persons who submitted the information for this survey. It indicates that the fire service is not satisfied with the *status quo* and that fire fighters throughout North America are pursuing actively those courses of training which will give them the greatest skills in the combat of fire.

TOTAL FIREMEN RECEIVING TRAINING
(State and Provincial Programs Only)
Year Ending June 30, 1956

State		State	
Alabama	1,902	Ohio	4,706
Arizona	186	Oklahoma	1,605
Arkansas	4,497	Oregon	4,328
California	5,030	Pennsylvania	8,527
Colorado	7,892	So. Carolina	1,051
Connecticut	1,040	So. Dakota	1,041
Delaware	1,461	Tennessee	464
Florida	1,483	Texas	4,228
Georgia	5,661	Utah	975
Idaho	250	Vermont	160
Indiana	1,000	Virginia	877
Iowa	4,310	Washington	12,717
Kansas	841	W. Virginia	483
Kentucky	1,237	Wisconsin	385
Louisiana	403	Wyoming	123
Maine	83	Total U. S.	102,110
Maryland	1,359		
Michigan	1,357		
Minnesota	220	Ontario	4,485
Missouri	2,423	Saskatchewan	383
Montana	1,194	B. Columbia	5,808
Nebraska	3,077	Nova Scotia	3,000
Nevada	464		
New York	10,479	Total Can.	13,676
No. Carolina	637		
No. Dakota	954	Gr. Total	115,786

Instructor Training

Significant in this year's survey of firemen's training is the increase of training given to fire department instructors. Most State and Provincial training programs featured at least one class or course for instructors. It is obvious that paid, call and volunteer fire departments realize that they need such personnel skilled in instructing fire fighters.

Major attention was given to instructor or teacher training in the following States and Provinces: Alabama gave such training to 847 fire officers and fire fighters. California held a special Fire Services Instructors Conference for 1,221 men. Colorado, Florida, Maryland, Idaho, Oregon, Pennsylvania, Maine, Utah, and West Virginia also focused attention on this subject.

The annual fire department instructors' school in Arkansas, attended by 96 fire officers, featured classes in "Departmental and Community Contact Problems," "Conference Leading" and "Leadership and Administration."

Iowa held a special course for drillmasters of paid and volunteer fire departments. Kentucky featured instructor training in a 20-hour class. Michigan featured a 30-hour conference for 49 fire department instructors.

New York State is producing new work books and lesson plans to assist instructors in arson detection and aircraft crash fire fighting. Texas held a conference for 354 instructors and drillmasters, and in the Province of Ontario, a special County Fire Instructors Course was held for 181 men.

Itinerant Training

The Provinces of Canada and a number of the United States are making good use of itinerant or traveling instructors. These men generally operate under the State or Provincial Departments of Education. In some cases they follow a regular schedule of traveling to various municipalities to conduct classes for fire departments. Otherwise they conduct such programs only upon request. Generally, the instructors have special station wagons or pieces of apparatus plus modern fire fighting equipment which can be used by the trainees who may not have such equipment available in their own fire departments.

As reported in previous years, the Provinces of Canada have had great success with this program. Ontario reported that last year at least 2,000 fire fighters in the Province received training from the itinerant instructors. British Columbia, Saskatchewan and Nova Scotia also report increased success with these programs.

Alabama, Delaware, Nebraska and Virginia are among the states that rely upon itinerant instructors or zone schools. Colorado is adding another full-time instructor to its state training program. Florida

ANNUAL STATE-WIDE FIRE SCHOOLS
1956

State	Firemen Attend.	No. Years Held
Alabama	123	20
Arizona	267	1
Arkansas	96	9
Colorado	434	23
Connecticut	264	15
Delaware	493	8
Florida	1,483*	27
Georgia	382	5
Idaho	225	7
Indiana	275	32
Iowa	606	32
Kansas	248	—
Kentucky	636	33
Louisiana	123	1
Maryland	306	23
Michigan	417	28
Minnesota	220	28
Missouri	209	—
Montana	150	—
Nebraska	988	19
No. Carolina	637	27
No. Dakota	136	—
Ohio	133	11
Oklahoma	302	23
Pennsylvania	287	—
So. Dakota	471	—
Tennessee	116	13
Texas	961	27
Utah	435	—
Virginia	125	10
Washington	500	—
W. Virginia	190	24
Wisconsin	110	—
Total	12,348	

*Two sessions

trained 1,096 fire fighters through this method. Nevada has also applied for a full-time traveling instructor. South Carolina reports that a great deal of success has been obtained through special 5-day programs conducted by traveling instructors upon request of fire departments in that state. During the past year, 43 of these classes were conducted in 41 South Carolina cities and towns. The State of Washington has 24 traveling field instructors, and California has a training team consisting of a Special Supervisor and 8 itinerant instructors. Kentucky instructors trained 1,237 fire fighters. Michigan trained 1,357 fire fighters in 39 communities. Georgia has 18 "Area Coordinator-Instructors" employed on part-time basis. During the past year they conducted training in 298 towns for 3,096 men.

Men undergoing fire training at the University of Maryland move to attack a fire in an 84-room dormitory, burned for the Structural Fire Class during the 23rd Annual Short Course.

Zone and Regional Instruction

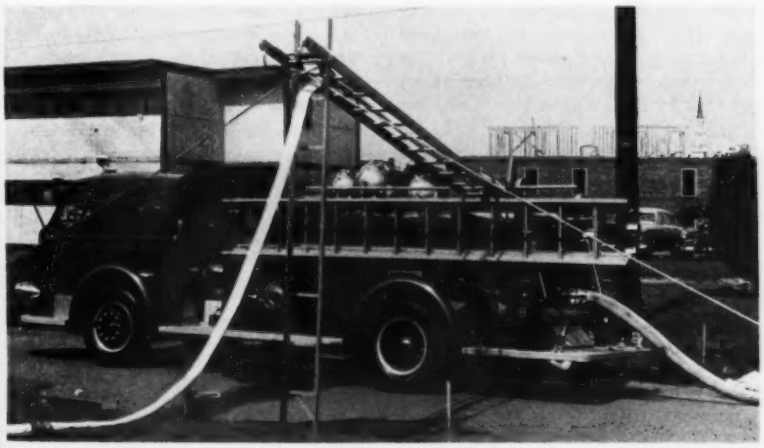
Many states broaden their firemen's training programs by conducting special zone, area or regional classes. California, Nebraska, Delaware and Florida make good use of this method. Connecticut held 22 regional schools at which 616 firemen received training. Delaware featured 3 county demonstrations in its program. Maryland conducted special regional schools to burn buildings and give volunteer fire fighters practical experience in water fog application and in fire company operations. Ohio trained 1,649 fire fighters through 12 regional schools. Oregon features "Area" schools for such training. Utah had more than 500 fire fighters attending various regional and county schools, while in the State of Washington 40 regional schools were conducted for the benefit of thousands of fire fighters. Wyoming trained 123 fire fighters in 5 regional schools. Louisiana held 17 sectional schools attended by 123 men representing 48 cities. The Vermont Firefighters Association and the State Department of Vocational Education sponsored 3 regional schools for 160 fire fighters. Arkansas emphasized the use of "master streams" at 12 regional schools attended by more than 1,200 men.

Chief Officer Training

Another fact evident in the survey was that provision is being made for additional education of fire department chief officers. More classes are devoted to the principles of fire department organization and administration as well as to new and special fire hazards.

Thirty-six chief officers attended two of these courses in Alabama. Connecticut again held its special conference for 80 chief officers at the University of Connecticut in Storrs. Florida held a special "Training Improvement Conference," attended by 48 fire chiefs and instructors. Kentucky held a special course in fire department administration, while Oklahoma also held a chiefs' conference. The Fire Chiefs' Institute of Virginia was attended by 149 fire officers. Some 212 municipal fire chiefs attended the annual conference in Ontario, and a similar conference for chief officers was held in Nova Scotia.

Practically all of the State and Provincial programs give attention to the training of fire officers below the rank of Chief. The state of Iowa, for example, which has some 15,000 volunteer fire fighters in 927 departments, found that there was a strong demand for officer training. This year some 1,500 fire officers from these departments attended the State College officer training classes. Wisconsin held a 6-session course for officers and prospective officers. Utah combined a fire officer training course with a course in fire control. Connecticut, Maryland, Ohio, Oklahoma and Oregon also devoted attention to officer training while the state of Tennessee divided its officer training courses into basic and advanced classes of instruction.



Hose bridge made by trainees of a Pump Operator's class at the University of Maryland.

Aircraft Fires

It is evident that more fire departments are demanding practical training in aircraft crash fire and rescue problems. Generally such training is conducted with the assistance of U. S. military, Naval or Air Force personnel, and in some cases airport facilities are made available for the special training. Since the renowned fire training facilities in New Haven, Connecticut were closed due to new highway construction, the Fire College was held at Trumbull Airport in Groton and featured special training in crash fire problems. Arizona, Indiana, Iowa, New York and Tennessee also included crash fire training in their programs.

Inspection Procedures

The training of fire department personnel in inspection procedures is a key subject in most programs. Full attention was given to such training as follows:

(Left) Fire fighters taking part in the Minnesota State Fire School had opportunity to use extinguishing techniques on this former dwelling.

Iowa held a course for 22 fire officers and fire fighters. Maryland conducted its annual short course for fire inspectors. New York State, because of the demand at the end of the preceding year's training program, activated a new course for fire department inspectors. In the Province of Ontario, the Annual Inspection Course had an attendance of 66. All fire fighters who complete this course are given a copy of the "NFPA Inspection Manual" which is the basic text for the course. (Maryland also uses the "Inspection Manual" as a text.) Ontario reported success with a number of 2-day courses for inspectors of electrical equipment. Some 563 inspectors received this instruction through classes conducted in various cities and towns throughout the Province during June and July, 1956.

Radio Operations

Since most fire departments throughout the nation rely upon radio communications, a number of the training programs included instruction on this subject. Some courses merely covered the fundamentals of radio operation, while in others radio instruction was combined with fire company or mutual aid training operations. Colorado and Nebraska concentrated on the basic principles of radio operation. Idaho received assistance from members of the Boise Fire Department who helped to train volunteer fire fighters in the fundamentals of radio operation. New York State incorporated such training with its "single company" training so that fire fighters could get used to relying upon the radio during size-up and attack of fires. Oklahoma conducted a special class in communications for fire company officers. Washington also incorporated radio communications in its state-wide program.

Arson

Instruction in the detection, prosecution and prevention of arson was incorporated in a number of training programs. California had 140 arson investigators, fire marshals and other personnel from six states, Alaska, Hawaii and British Columbia attending its fire and arson investigation short course. Connecticut covered this subject in a Fire Marshals' Conference for 80 fire service members at the University in Storrs. The state of Florida held its first Arson Seminar with 131 men attending. Ohio conducted its second Annual Arson School and Texas also held a special conference.

Radiation Monitoring and Hazards

With increased attention being given to the use of atomic energy in industry, firemen's training programs are incorporating more and more training in the detection and hazards of radioactive material. The special survey course (see FIREMEN for December 1955) in radiation monitoring was again held at the University of Maryland. The Michigan training program featured instruction in the various meters and devices used for measuring radioactivity. Nebraska and Colorado also incorporated instruction in the use of radiation detection equipment.

Flammable Liquids

Training in the combat of flammable liquids fires was featured at a number of the annual fire schools. The State of Arizona held a special oil fire control school in Phoenix in October, 1955, presented with the cooperation of the Arizona State Department of Vocational Education and the Western Oil and Gas Association. This training features instruction by experts from the oil and gas industry together with leading fire officers. Other practical flammable liquids and LP gas fire fighting courses were conducted in Connecticut, Iowa, Maryland, Nebraska, North Dakota, Oklahoma, Pennsylvania, South Dakota, Washington and British Columbia.

Fixed Protection

The study of automatic sprinklers and fire detection devices used in industry was incorporated in the training programs of Connecticut and Texas. The province of Nova Scotia also gave attention to this subject during its Chief Officers Conference.

What Do the Men Want?

One of the questions in the survey sent to State and Provincial training directors by the NFPA Fire Services Department was a request for information on the new kind of instruction requested by fire fighters. The responses proved interesting. Undoubtedly, training programs of this year and of the future will include some instruction in the requested subjects.

In Arizona, for example, further instruction was requested in pre-fire planning in radio procedures. Colorado fire fighters wanted more instruction in water fog application, radio communications and mutual aid. Iowa found that further training was requested in pump operation, fire department organization, administration training for fire officers, and special hazards control. Maryland fire fighters wanted additional instruction in hydraulics and more conferences for fire officers. Nebraska men wanted training in first aid and rescue on water and on land. Oklahoma and Pennsylvania fire fighters wanted more instruction on communications. Texas fire department members were looking for more information on radiation hazards and monitoring. British Columbia fire fighters looked for more training in aircraft crash fire fighting and rescue. New York State men wanted further instruction in pump operation, aircraft crash fire fighting and rescue, and arson investigation. Arkansas fire fighters requested more training in the combat of full-scale flammable liquids and building fires.

(Right) Instructors participating in the 18th Annual Pennsylvania Fire School are shown here. Arthur W. Espey, Supervisor of Training at the Lewistown School is in the second row, second from right.

What's Coming?

Many of the responses from State and Provincial directors of firemen training included mention of plans for improving training programs or training facilities for the future.

Arizona, for example, is considering the possibility of a state training center. California is planning a special course in fire department administration for chief officers who are "second in command." Michigan has hopes of incorporating a new fire training center and research laboratory at the University of Michigan. Missouri plans to include instruction in advanced techniques of fire fighting and officer training.

North Carolina looks forward to establishing a new state training center. Oregon wants to feature a special instructor who will conduct district schools for volunteer fire departments. Pennsylvania plans to extend its excellent fire training facilities in Lewistown and also plans a winter conference for fire service instructors. South Dakota is planning for a new training center. Tennessee has already dedicated its new fire training facilities at Murfreesboro and reports that the construction of the training building and drill tower will be completed in time for use during 1957.

In Wisconsin, legislation has been sponsored by the Wisconsin Council of Firemen's Association for a state-wide firemen's training program through the Vocational Education Department. British Columbia has plans for training of fire service officers. Saskatchewan hopes to add a new "visualcast" projector with a complete set of transparencies for supplementing instruction of fire fighters.

Highlights and Miscellaneous

Other features of State and Provincial training programs reported to the NFPA Fire Services Department included the following:

Florida conducted a 3-day class in liquefied petroleum gas fire fighting, attended by 113 fire service members. . . . Indiana held a ten-hour course for volunteer fire fighters; made a thorough survey of the need for other fire training in the state; incorporated hospital rescue operations in the fire training program, and also devoted attention to hazards of high voltage electrical equipment. . . . Iowa featured a special fire prevention workshop for fire inspectors. . . . Louisiana gave some attention to training fire fighters in the maintenance of apparatus and equipment; Pennsylvania also gave attention to this subject.

Maryland, Utah and Texas added training classes in grass and brush fire fighting. . . . Nebraska featured instruction in the handling of "hot" electrical wires and in the combat of magnesium casting fires. . . . New York State instructors acquired new training aids from New York City and also gave attention to the use of portable pumps and high and low pressure water fog. . . . Oregon added some training classes in volunteer fire department administration and demonstration. Instructors in that state have developed a working model of a two-stage pump with plastic waterways.

Tennessee had at least 14 structural fires for training in water fog application. . . . Dwire Garrett has succeeded Captain Cook as Supervisor of the state training program in Washington. . . . West Virginia's training program included training of fire prevention bureau personnel. . . . The British Columbia program included a special course for personnel of the Canadian Navy. . . . Saskatchewan instructors have added a power generator to their training equipment together with a new portable canvas tank and "float dock." . . . Nova Scotia has developed a good film library to supplement its training program and has also issued training manuals to all fire departments. . . . Officers of the Halifax city fire department assisted Provincial instructors in the training program.

Training officers who attended the Third Annual Fire Service Instructors' Conference in Fresno, California.

Industrial Seminar

THE 1957 Industrial Fire Control Seminar is scheduled to be held at Purdue University, Lafayette, Indiana, January 7–9. Instruction will be by lectures and demonstrations, with field trips to local industrial plants.

Fee for the three-day meeting is $15. Registration will begin at 8:30 P.M. CDT at Purdue Memorial Union. For further information write to Norbert Lehman, Fire Training Instructor, Purdue University, Division of Adult Education, Public Safety Institute, Lafayette, Indiana.

New Officers of the IAFC

DURING the 83rd Conference of the International Association of Fire Chiefs at Miami, Florida in November, a new group of officers was elected for the coming year.

President is Chief Wayne Swanson of Rockford, Illinois; 1st Vice President is Chief Donald Charles of Charlotte, North Carolina; 2nd Vice President is Chief Reynold C. Malmquist, Minneapolis, Minnesota, and Treasurer is Chief George A. Mitchell, Opelika, Oklahoma. Secretary Manager of the IAFC is B. Richter Townsend and Executive Secretary is Jay W. Stevens of San Francisco, California.

The 84th Annual Conference is scheduled to be held in New Orleans, Louisiana, September 8–12, 1957.

"Index & Directory"

MORE than eight years of research has gone into the preparation of a "Fire and Accident Loss Control Index & Directory," now available from Loss Control Associates, 629 Oakmont Drive, Plattsmouth, Nebraska. This first edition is approximately 11¾-in. high, 9½-in. deep and 4-in. thick.

It is divided into two principal parts, the first being an "Index and Guide" section (red tabs) and the second a "Key and Directory" section (green tabs). For instance, there is an index item for "Hose, Fire, and Couplings." Subdivisions of this section indicate where information and publications may be obtained on adapters, friction loss, specifications, suction, etc. (there are a total of twenty-two subdivisions on this one item along with thirteen cross references to other index items). The "Key and Directory" section gives the names and addresses of the sources of the indexed publications plus pricing information where applicable.

Obviously, an "Index & Directory" of this type would quickly become obsolete if supplements were not available to keep it current. Such a supplemental service is available from the publishers.

Single copies of the original "Index & Directory" cost $48.50. The book and further information are available from the above address.

Pumper Capacity at Hydrants

By Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor of FIREMEN magazine

HOW much water can we safely pump from a reasonably good hydrant with a 500 gallon per minute Class A centrifugal pump? We know that from draft this pump has been tested to deliver 500 gpm at 150 lbs. net pump pressure.

Let us assume that the hydrant in question will deliver 500 gpm with 30 lbs. residual pressure showing on the pump suction gage. Other things being equal, we should then be able to add the pump performance to the hydrant performance, and get substantially the pump's rated volume at a higher discharge pressure. It is something like adding another pressure stage to our pump.

As shown in the sketch below we get the volume output of the pump at a higher pressure because of the energy imparted through the hydrant by the water system. If the hydrant gives the required flow at 40 lbs. we can add 40 lbs. to the net pump pressure to determine the maximum pressure at which we can get our rated capacity without appreciably greater engine speed.

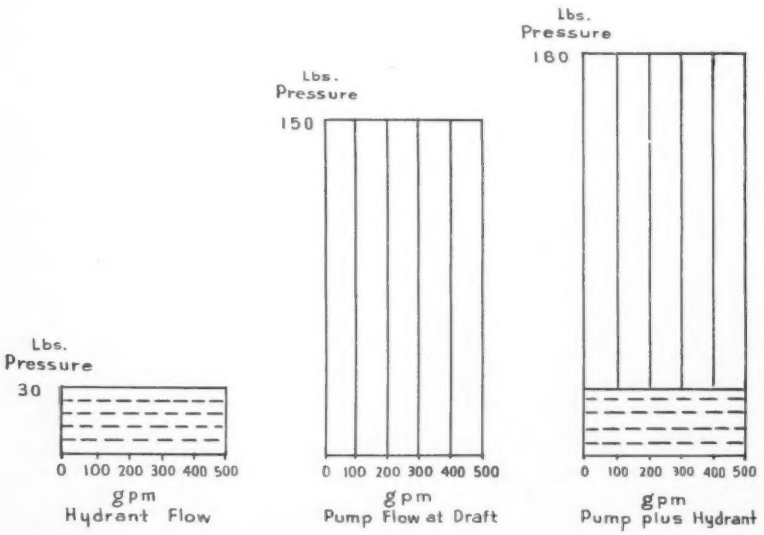
This will be possible if we have the proper hose layout and nozzles to make use of this added pressure performance.

Getting Maximum Volume

Now let us assume that we only need 150 lbs. pump pressure but that we want the maximum volume of water that the pump can safely handle while working at this particular hydrant. The pump is receiving the water at 30 lbs. residual pressure. It is only necessary for the pump to add 120 lbs. pressure in order to discharge at 150 lbs. Thus the pump is required to add only 80 percent of the pressure, while at draft the pump would have to provide the full 150 lbs. With this 30 lbs. hydrant pressure we would not have to use 20 percent of the pumper's rated energy output.

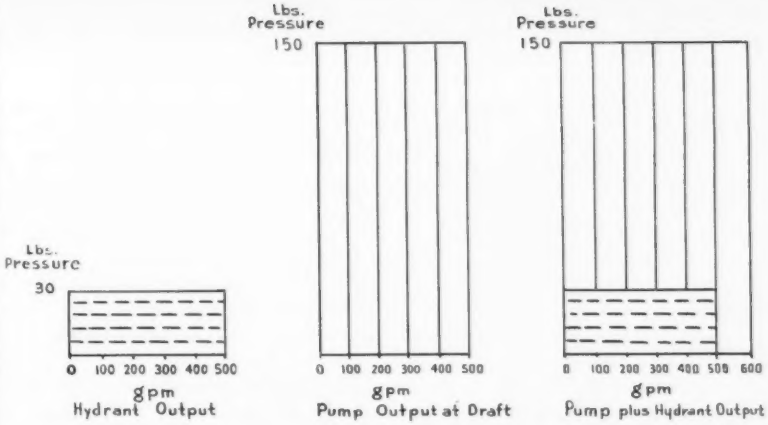
We already know that, if we wanted to run the pump at 150 lbs. above hydrant pressure, we could discharge the full rated capacity at 180 lbs. But we want additional volume rather than more pressure. Thus, assuming that the hydrant pressure will hold up while providing additional volume (as indicated by the reading of the supply gage), we can add about 1/5th more to the volume pumped. We then can pump about 600 gpm at 150 lbs. on the discharge gage with about the same engine speed needed to discharge 500 gpm at draft. This presupposes that supply and discharge lines are ample to handle the flow. The work involved is shown on the opposite page diagram in the terms of pounds-gallons. It could be shown in foot-pounds or water horsepower.

Actually, we could pump more than the extra 20 percent from this hydrant if the pump was run at full throttle. But, if the pump is run at full throttle we have no power reserve and we may overheat or overload and damage the engine or pump. On standard pumping engines there is a plate near the operator's panel which shows the engine speed at which the pump passed the manufacturer's test and the engine speed that represents 80 percent of the peak engine speed of the manufacturer's certified brake horsepower curve. This gives a pretty good idea of the rpm that may be used efficiently in capacity operation. The 80 percent of the peak engine speed is the maximum speed that is permitted in passing the pump capacity acceptance test. It is a good practice not to exceed these speeds if it is desired to continue pumping heavy volumes of water for any appreciable time without danger of emergency shutdown. (Some pumpers have an indicator which shows the safe speed that is not to be exceeded at a given load.)



Sketch shows how pressure of hydrant is added to pump pressure while volume output of pump remains the same.

UNFORTUNATELY, when pumping large volumes (above rated capacity) from a hydrant it is possible to have a dangerous overload while the tachometer shows a relatively low engine speed even when discharge pressures are relatively low. Assuming that the engine is in the proper gear for pumping, the trouble may be due to the fact that, because the hose and nozzle layout chosen is beyond the capability of the pumping energy, the engine cannot get up to proper working speed. As an example, if an attempt were made to supply four 200 to 250 gpm streams through a 500 gpm pump, it is probable that the water load measured in foot-



With 30 pounds residual pressure at hydrant it is possible for a 500 gpm pump to add about 1/3th to its volume capacity when operating at only 80 percent of its rated pressure.

pounds would be so heavy (unless the discharge pressure was very low) that the engine would be inadequate to provide the energy demanded for the load attempted.

As pointed out, the relative work loads of various pumping requirements can be checked very readily by determining the number of "foot-pounds" of work the pumper is expected to lift. A gallon of water weighs 8.336 lbs. and a pound of pressure will lift water 2.31 feet. Thus, with a pump delivering 500 gpm at 150 lbs. (without assistance of hydrant pressure) we are lifting 4168 lbs. of water per minute to an equivalent of 346 ft. of pressure head, or 1,442,128 foot-pounds. This will give us a fairly good indication of the work load the engine and pump were designed to handle.

Let us assume that because of the available hydrant pressure we only need to develop 120 lbs. additional pump pressure or a 277-ft. pressure head. For practical comparative purposes we can divide the 1,442,128 foot-pounds by 277 and we find that we should be able to handle 5206 lbs. of water per minute which divided by 8.336 pounds of water per gallon gives us about 625 gallons per minute as an approximate work load equivalent. Obviously, there are other factors involved such as waterway design, impeller efficiency, turbulence, etc., but for practical purposes we know that 600 gpm at 120 lbs. provides no more work for the engine than 500 gpm at 150 lbs. Some persons consider that gallons × pump pressure gives a sufficiently accurate engine work load check for practical purposes. Under this method 500 gpm × 150 lbs. = 75,000 lbs. The 75,000 divided by 120 lbs. also indicates 625 gpm in this case. It may be noted that the 625 figure is somewhat higher than we obtained by merely adding hydrant pressure to the actual pump pressure where we merely added the hydrant and the pump's rated performance together. However, when attempting to increase volume beyond that for which the pump was rated, even with a lower pump pressure output you may be up against certain design factors that may limit the output to something below the theoretical. Nevertheless, it is known that many 500 gpm centrifugal pumps working at a strong hydrant supply have supplied better than 750 gpm. How can this be done without excessive engine load?

LET us assume that discharge pressure needed is only 120 lbs. and we are receiving water at 40 lbs. hydrant pressure. If the hydrant flows the 750 gpm at 40 lbs., and we want a total of only 120 lbs. discharge pressure, the pump needs only to provide 80 lbs. additional pressure. As we have seen the pump is rated to deliver approximately 75,000 pounds and 75,000 ÷ 80 lbs. gives a theoretical possible 937.5 gpm. Now, it would be dangerous to assume that a 500 gpm pumper will pump more than 900 gpm at a hydrant. There are entirely too many "ifs" or variables involved. There is always the question of the ability of the hydrant to give the larger flow at effective pressures. Then there must be additional hose lines of proper length and nozzles of proper size would be required.

Accordingly, we need practical guidance as to what excess volume of water may reasonably be expected when pumping from a hydrant and what our method of operation should be. The following method of obtaining maximum safe pumping capacity at a hydrant is recommended.

We know that a Class A pumper gives capacity at 150 lbs. net pump pressure. Each 15 lbs. assistance received from the hydrant represents 10 percent of the pressure requirement of the pumper. Also, with a 500 gpm pumper 50 gpm equals 10 percent of the volume performance and with a 750 gpm pumper 75 gpm equals 10 percent of volume performance. Thus, if instead of desiring to increase pressure we wish to increase volume we may estimate that each 15 lbs. hydrant residual pressure provides energy for a 50 gpm increase in volume or 75 gpm increase in volume as the case may be. Thus, if the hydrant will give 650 gpm at 45 lbs. we can have a 30 percent increase in output of a 500 gpm pumper when operating from the hydrant without appreciably changing the work load. Of course, common sense is needed in using this method. The exchange of pressure and volume must be used with some discretion with a knowledge of the amount of water an individual pump will actually handle. Unless volume tests have been run on a pump at a good hydrant it is probably unwise to assume that the pump can handle much over 20 or 30 percent above its capacity as rated at draft, but some centrifugal pumps have been known to deliver better than 50 percent above their rated output when pumping from hydrants while supplying relatively short hose lines.

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An Advanced Approach to Fire Prevention and Inspections

From an address during the 83rd IAFC Conference at Miami, Florida, by Chief Edward Connors of the New York City Fire Department.

IT IS a frequent misconception in the minds of many persons that fire prevention is an avocation of the Fire Department, a mere sideline of daily activities. At one time this mistaken attitude was even more prevalent in the thinking of Fire Department personnel than with the general public. This attitude has given way in recent times to the wiser and more accurate concept of the Fire Department's dual purpose.

Today, the intelligent fire officer and fireman entertain no uncertainty concerning the Fire Department's legal and moral responsibility to adopt and enforce every known means of preventing and controlling fire. They realize that this phase of their duties is closely allied with the problems of fire extinguishment which cause the constant response of apparatus to fire operations at great expense to the community as well as loss of life and property. As a matter of fact, the mandates of the New York City Charter, and the Administrative Code of the City of New York, are a great deal more specific and demanding with regard to fire preventional activity than with fire extinguishing methods and duties.

The Fire Department is primarily charged with the protection of life and property against the ravages of fire. New York City with its population of over 8 million people, and a daytime population of over 12 million people, its heavily congested business, manufacturing, residential and amusement areas, plus the varied types of construction and occupancies, presents a complex problem of fire potentials to the Fire Department.

A twenty-four hour a day vigilance on the part of 11,000 well-trained fire fighters, operating under a vast, but highly efficient fire communication system, constantly in touch with dispatching officials via a 2-way radio system is the department's answer to the tremendous fire extinguishment problem. In New York City, under the direction of Fire Commissioner Edw. F. Cavanagh, Jr., the current schedules of well planned and organized apparatus field inspection of all areas throughout the entire city, utilizing all uniformed personnel, and with all activities under the supervision and guidance of the Division of Fire Prevention, the Fire Department is coping with the vast intricate problem of fire prevention.

An amazingly small percentage of people actually appreciate the Fire Department's vast scope and the immense responsibilities beyond the stage of fire-fighting operations. Quite naturally, this has the tendency to minimize the importance of fire prevention activities which are so essential for the reduction of fire causes and fire extension.

Fire prevention and necessary enforcement action involve rigid regulations and restrictive orders. It is a peculiar quirk of the public mind that thorough inspections and enforcement action frequently give rise to personal resentment against the Fire Department. In many cases the department discovers they have incited angry opposition from an otherwise law-abiding taxpayer. Fortunately, experience has indicated that most fire preventional regulations can be applied on a commonsense, educational basis with highly effective results.

At the present time the New York Fire Department has established a well organized three-pronged attack which has produced remarkable results. (*See two-year summary below — Ed.*)

A brief review of our present fire prevention program indicates the completeness of the approach made by the Fire Department in their constant endeavor to carry out the dual responsibility of fire prevention and fire extinguishment.

1. *Inspectional Activities.* Inspections, intelligently planned and carried out, are the backbone of fire prevention work. Thoroughly cognizant of this, the Department has effected the following field inspection program that is well organized, flexible and highly efficient in operation.

2.

New York City's Fire Prevention Bureau Activities

	1954	*1955*	*Increase*
1. No. of F. D. Permits	326,090	342,109	15,019
2. Total Permit Fees Collected	$4,830,275.91	$5,096,685.68	$266,409.77
3. Total No. of F. P. Inspections . . .	699,137	867,774	168,637

Fire Prevention District Office Activities

There are fourteen (14) Fire Prevention District Offices, staffed by uniformed members, located in various parts of the city. The personnel assigned to these offices process all inspectional surveys on applications for Fire Department permits. In addition, inspectional activities are carried out on violation orders, complaints and unusual conditions.

Field Inspections by Chief Officers

This type of inspectional duty is carried out by deputy and battalion chiefs in accordance with a schedule promulgated by the Fire Commissioner. Inspections by these officers are directed at unusual or target hazards in their Administrative Districts. In addition, these officers perform inspectional duty at nighttime in all places of public assembly and amusement throughout the city.

Apparatus Field Inspection Duty

This medium of inspectional work has been established for the purpose of having all members of the department participate in the fire prevention program. Members, using company apparatus for transportation, well instructed by alert company officers, systematically inspect company districts in search of violations, hazards and unusual conditions in all types of buildings and occupancies. This work, performed on schedules promulgated by the Fire Commissioner, has the added benefit of acquainting all members with the structural and occupancy hazards in all buildings within their districts. By means of two-way radio with which the units are equipped and in constant touch with Bureau of Fire Communications, there is no diminution of fire protection or response to alarms of fire.

2. *Educational Activities.* The average businessman, employee or property owner, is not trained to recognize fire hazards, nor does he possess the practical knowledge of the sinister factors that influence the spread of fire. Fatalities, injuries or severe financial setbacks are the usual awakeners, and even these rarely teach the lessons that prevent recurrence of fire. Realizing this inadequacy, the Fire Department endeavors to incorporate as much public education in its program as possible. A fire prevention educational unit composed of officers and firemen has been established for the prime purpose of carrying out an educational fire prevention program through the medium of radio, television, newspapers and personal appearances before large groups of persons in factories, industrial plants, civic organizations and other assemblages. In addition, uniformed and civilian personnel have been instructed to teach fire prevention.

FOR many years the use of kerosene oil in heating units in residential buildings has been the cause of tragedy and fatal fires. The Fire Department, recognizing the problem, concentrated its efforts on a wide-spread educational program through the medium of television, radio, press, educational talks by uniformed members, and a constant distribution of educational literature relative to the hazards of kerosene oil heaters and simple safety precautions to reduce this hazard to a minimum. Again the department was successful in its program and effort. During the winter season of 1954–1955, there were 28 deaths, caused by kerosene oil heaters. A stepped-up educational and inspectional drive on this serious fire hazard had excellent results, as indicated by a record of *4 deaths during the winter season of 1955-1956.*

In another effort to demonstrate that fires can be reduced by concerted effort and cooperation of the Fire Department and our people, two of the most congested areas of the city, East Harlem in Manhattan and Brownsville section of Brooklyn, were selected for a special inspectional and education drive. Both of these areas show a high fire incidence mark of *10 fires for a 24-hour period.*

On February 29, 1956, the area in East Harlem was patrolled by apparatus and a team of fire prevention inspectors; also, on April 10, 1956, the same procedures were carried out in the Brownsville section of Brooklyn. Results were again favorable, with a total of only *3 fires in each of these areas* for the 24-hour period of the above mentioned dates.

We have a new trend in New York City in Fire Prevention. With the cooperation of the Board of Education of the City of New York, and the University of the State of New York, we are having staff members of the Fire College receive teacher training. This will give us a group of qualified instructors to run our various courses of study.

In addition, we are joining forces with the Board of Education in the field of fire prevention education. Plans are under way to provide free courses in the evening vocational schools for persons in charge of buildings in the city, superintendents, engineers and other such titles.

The implications of such a plan are as follows: If this plan could be made to materialize fully, we then would have a trained liaison man for the Fire Department in every premise. The granting of the permit for the premise for combustibles could be made contingent upon the presence of such a licensed person on the premises. In addition with the issuance of the permit, there would be included several "self-inspection" forms to be filled out and signed, at certain intervals. We would then have possible, not only the living up to the letter, but also the spirit of the law. Ignorance would no longer be an excuse for failure to live up to the fire prevention laws. Then again, if fire did break out on such a licensed premise, it is very likely that the trained person would do the proper things — sending the alarm, closing doors to confine fire, and taking steps to extinguish the fire, if minor in nature. In addition, the probable cause of the fire could be more accurately determined where a cooperative person is on the premises.

Over the years, the fire departments of the country have shied away from the concept of personal responsibility for fires. People who have been involved have been considered "unfortunates." But mounting fire losses leave little room for maudlin sympathy. We will have to change to a "get tough" policy sooner or later. What better way than to present cost-free fire prevention education to the representatives of management together with a licensing of the person who takes the course as the fire prevention representative on each premise, responsible not only to his boss, but to the fire department and to the community. Truly then, by simply placing the emphasis upon fire prevention we can help to make our world a much safer place.

What to Do about

First Aid and Resuscitation

After making a survey of fire departments in Eastern States, Dr. Lewis H. Lambert, Staff Anesthesiologist of the Hitchcock Clinic in Hanover, New Hampshire, drew the conclusions reported in this article. His findings may assist fire departments in developing adequate training programs for their personnel.

THERE appears to be an increase in the number of calls on fire departments for first aid and/or resuscitation. In larger communities more and more equipment and training are being devoted to these functions. Several reasons for this increase seem apparent:

Public knowledge that a call to the fire department can bring men and equipment to the scene of an emergency (regardless of its nature) with great promptness.

Public knowledge that fire departments can handle first aid and resuscitation problems quickly and efficiently.

A tendency on the part of hospitals to suspend or limit ambulance service.

Difficulty in procuring the immediate services of a physician.

It is probable that this trend will continue and will create a demand on smaller communities to provide similar services. The problem then, is to see if such communities are in a position to meet the demand for general first aid and proper use of mechanical resuscitators.

Recently a questionnaire was sent to some 75 departments in the New Hampshire-Vermont area, and to some of the larger Eastern seaboard cities, in an effort to evaluate what was being done as far as first aid and resuscitation were concerned. The municipalities were divided roughly into three categories by population: up to 3500, 3500 to 10,000, and above 10,000.

As one might suspect, the cities of 10,000 and greater population are doing a great deal. About half of these fire departments have separate rescue squads which are drilled constantly in first aid and the use of a mechanical resuscitator. Most departments reported that all men are trained in first aid, especially the rescue squads. This is not surprising since these departments are composed of paid firemen, a large part of whom would have time for such training. Most fire departments have little problem with securing first aid instructors; either they have Red Cross instructors within their membership, or have easy access to personnel of the Red Cross Chapter in the community.

Response to the mechanical resuscitator questions indicated considerable variance. All fire departments in the 10,000 and greater class have mechanical resuscitators. And here uniformity ceases. Some fire departments teach all their men the operation of the resuscitator — some limit instruction to members of the rescue squad. Teaching is done by fire department instructors, by manufacturers' representative, by a physician, or by combination of all three. Frequency of review varies from weekly to every six months.

In the 3500–10,000 class only two fire departments indicated that they had a separate rescue squad. Only about one-half of the reporting departments give their entire membership training in first aid. This again seems reasonable since a large portion of the memberships are call men and presumably such first aid training is given to the paid nucleus of the various groups. Instructors usually are men within the departments who are qualified Red Cross instructors, or outside personnel secured by contact with the local Red Cross Chapter.

All but one department in the 3500–10,000 class have mechanical resuscitators. As far as instruction and frequency of review is concerned, there is again wide variance in policy.

In the 3500 and below group of towns there appears to be a lack of trained first aid personnel in almost all the fire departments reporting. However, there certainly is no lack of enthusiasm. The difficulty seems to lie in procuring adequate instruction.

Most of the 3500 and below towns also have resuscitators. The problem of instruction and review is no more clear-cut in this group than the others — the only difference being that review of training in operation of the machine is less frequent.

Conclusions

From this type of survey one may conclude that:

Fire departments in the larger communities are in a favorable position as far as first aid training and instructors are concerned, but the smaller community is held back by a lack of instructors.

When possible, most fire departments attempt to have all their men trained in first aid.

Regardless of size, most fire departments have mechanical resuscitators.

There is no established procedure as to who shall teach the use of the mechanical resuscitator, how to give such training or when it shall be taught.

It appears inevitable that the smaller towns are going to become more involved in first aid problems The marked increase in travel by the public presents increase in hazard which touches the small community. Plane crashes, bus accidents, auto mishaps can and have happened within the boundaries of the smallest townships.

Recommendations

RED CROSS representatives have made the following suggestions:

Departments desiring Red Cross instruction should contact the Red Cross Chapter within their community, or nearby community, and express their needs and plans.

If such contact cannot be made easily, write directly to the Red Cross State Director in First Aid and Water Safety who will attempt to make satisfactory arrangements.

(*Continued on page 26*)

Roof Assembly Tests

EVER since the August, 1953, large loss fire in the General Motors Plant, Livonia, Michigan, fire protection and construction engineers have been looking for roof assemblies for flat roof decks which would not contribute to the rapid spread of fire.

In this connection the Factory Mutual Laboratories at Norwood, Massachusetts, erected a structure for the testing of roof assemblies, and several different materials have been tested. A recent test employed pressure treated fire retardant wood submitted by the Koppers Company, Inc., of Pittsburgh, Pennsylvania. Two gasoline spray nozzles were operated under the roofing for one hour, the temperatures reaching 1,700° Fahrenheit in accordance with the standard time-temperature curve used in fire testing.

At the end of the hour's test, it was found that only the wood in direct contact with the flames had charred through, and that the remaining fire retardant wood, while charred on the surface, had not burned through although two unprotected steel beams 100 ft. from the fire end of the test structure had buckled under the extreme heat. The 2" Douglas fir wood roof deck had been pressure treated with fire retardant salts composed primarily of salts of ammonia and phosphorous to which a wood preservative had been added.

As pointed out in a recent issue of the NFPA *Quarterly* Magazine, attention is also being given to the venting of industrial roof decks to release heat and smoke during fires to permit effective approach by fire fighters.

Exterior view of structure used for fire tests of roof assemblies by Factory Mutual engineers at Norwood, Mass.

Interior view of roof test structure. Note charred timbers in foreground and buckled unprotected steel beams in rear.

Good Stop at Church Fire

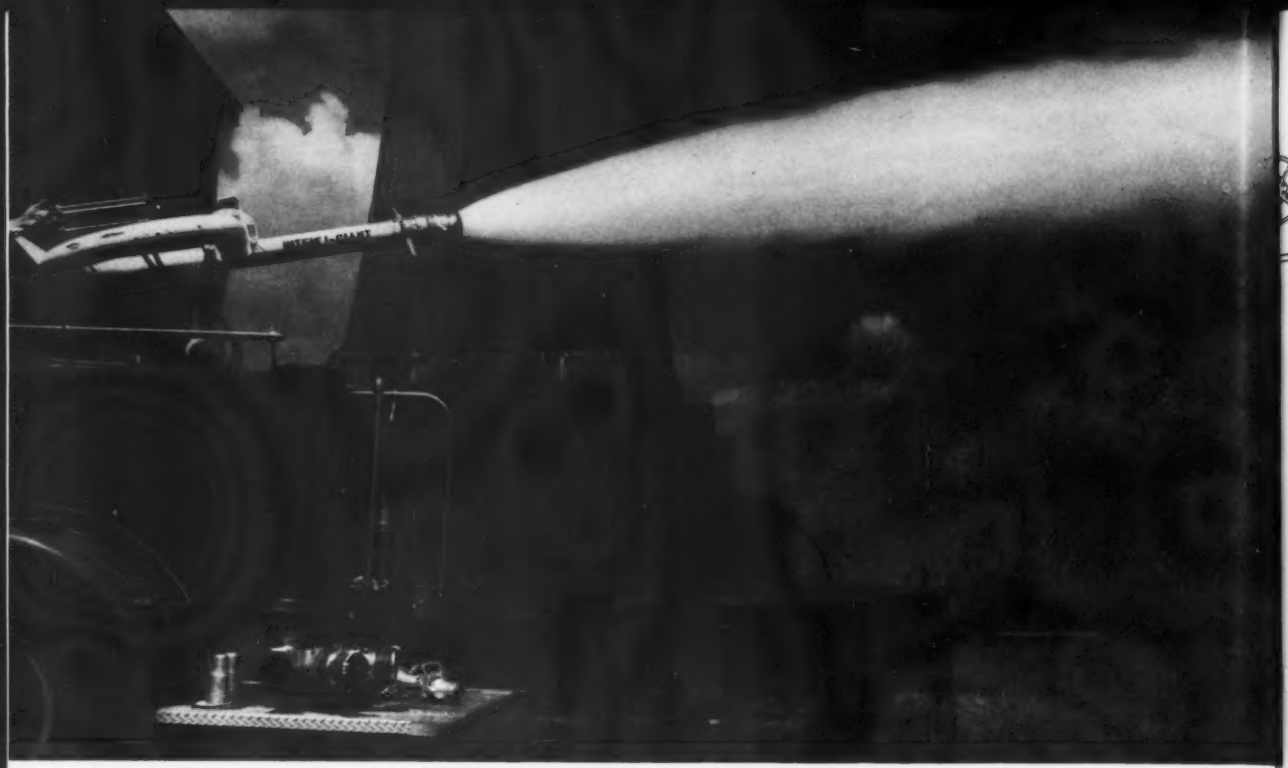
Members of the Boston, Massachusetts, Fire Department handled this church fire competently on the morning of October 19. The first of three alarms was pulled at 3:29 A.M. Responding fire fighters had difficulty in forcing heavy wooden doors of basement and main church. The fire apparently had smouldered for some time and as the men entered the church it flashed through the front areas of the basement and first floor, then extended rapidly through joist channels to roof. Attack was made with twelve 2½-in. lines and seven 1½-in. lines were used for mopping up. A deluge gun protected exposures. Note men finishing fire attack above organ. Loss to the 2-story stone, wood framed 85-ft. high structure was estimated at $75,000.

Sparky Greets a Newcomer

CHIEF Lewis A. Marshall's Providence, Rhode Island, Fire Department received national attention in the Press because of a unique contest conducted during the past Fire Prevention Week. Some time ago, members of the Department decided to award a Sparky doll to the first child born during the Week to parents in the City. Provision was also made to award "Ginger" dolls, dressed in firemen's clothing, to the later arrivals.

Winner of the contest was Nancy Ann Fratus, born to Mr. and Mrs. Roy Fratus on October 7. She is shown below in the quarters of the Rescue Squad with her new companion, Sparky. Some 40 other babies arrived in Providence during Fire Prevention Week and a couple of the new parents were fire fighters. However, it took nearly a week for the contest judges to decide just which child arrived first.

Battalion Chief Leo F. Gorman presented Sparky to Nancy Ann Fratus just before this picture was taken. Her casual acceptance of the honor received national attention in the Press.



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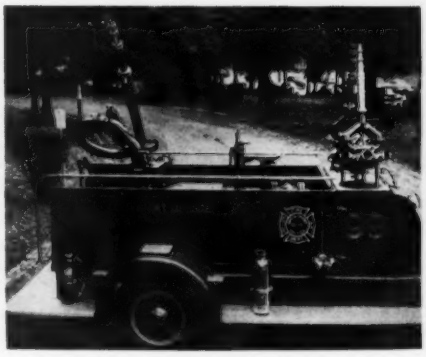
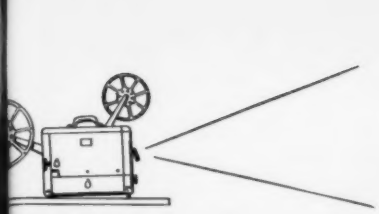
Capable of delivering a quenching 2,500 gallon per minute deluge, this latest development in master stream fire fighting equipment has a dramatically effective striking range of better than 320 feet in distance, a far reaching 165 feet in height. Yet with all of its powerful striking force, one man seated at hydraulic controls has finger tip mastery of the Intelli-Giant at all times. Extremely versatile, the design of the Intelli-Giant makes it ideally suited for installation either on mobile equipment or as a fixed emplacement in hazardous areas.

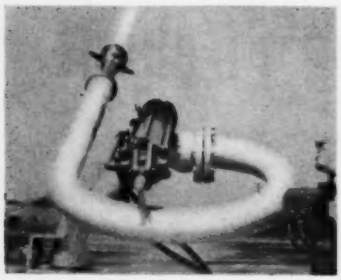


Dispatched to combat a roaring mill fire on an island in the Schuylkill River, this Intelli-Giant, owned by the Philadelphia Fire Department, reached areas where conventional monitors could not. It successfully prevented the raging inferno from engulfing 650 feet of the seven story building not yet affected by the fire.



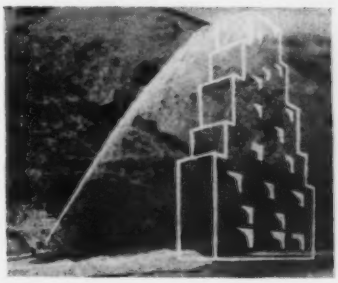
Be sure you see "Modern Firefighting"

a highly informative movie now available on the latest development in master stream equipment. Write Chiksan, 338 Pomona Avenue, Brea, California, to arrange a showing.

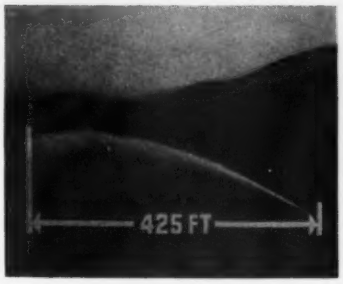


Patented barrel design of the Intelli-Giant provides a single full diameter stream regardless of barrel position.

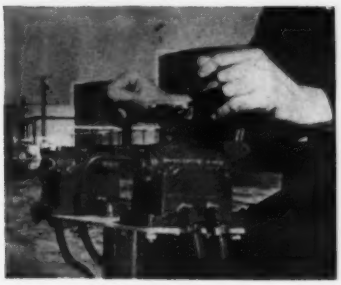
Any standard nozzle can be used from smaller sizes up to a 3-inch size, singly or in stacked tips.



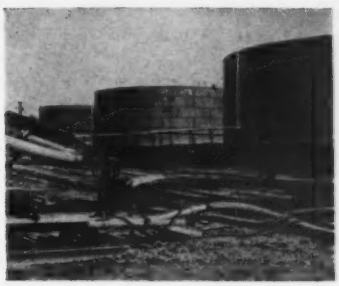
Elevated to 75°, the Intelli-Giant's stream reaches a height of 165 feet . . . enough to top a 12 story building.



At 30° elevation and with sufficient pressure, the Intelli-Giant delivers 2500 gpm a far reaching 425 feet.

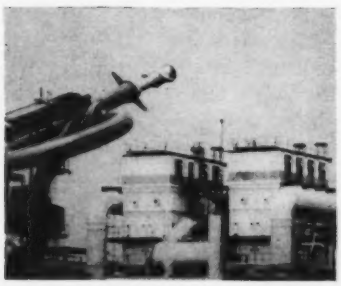


Motion of the barrel is controlled by two levers operating fourway valves. Barrel stops in existing position when levers are released.

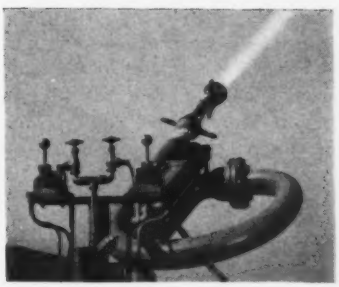


Remote controls permit Giant to be set in close to fire yet operated from a distant vantage point.

Even when operated manually, one man using one hand has complete control of stream direction at pressures from 30 to 300 psi.



Located as a fixed emplacement, in hazardous areas, the Intelli-Giant permits immediate action minutes after fire detection.



The Intelli-Giant, with its high volume output and simple controls costs less than monitors of comparable size.

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Baltimore Gets Powerful, Quick-Turning Fireboat

The "Mayor Thomas D'Alesandro, Jr." shown delivering her full capacity of 12,000 gpm during drills in the Camden, New Jersey yards of the RTC Shipbuilding Corporation.

THE City of Baltimore, Maryland, recently acquired this new fireboat the "Mayor Thomas D'Alesandro Jr.". It was designed to provide exceptional maneuvering characteristics at a speed of 17 statute miles per hour. Delivery price was approximately $550,000.

Overall length of the twin screw diesel fireboat is 103 feet 8 inches and draft is 7 feet 8 inches. It is capable of pumping 12,000 gpm at 150 pounds and can deliver 320,000 gallons of foam in 20 minutes.

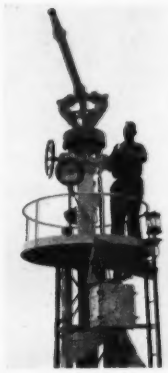
When the fireboat was authorized by the Baltimore Board of Fire Commissioners, fire chief Michael H. Lotz and naval architect Thomas D. Bowes, M.E., made a survey of the city's harbor requirements. After the required characteristics of design for speed and maneuverability were decided, Professor Louis A. Baier of the University of Michigan designed a model to be towed in the University's Experimental Model Basin. This experiment indicated that it should be possible for the designed fireboat to achieve a speed of 17 mph if displacement could be held down to 175 tons. Accuracy of the design and engineering calculation was proven in recent trials on the Delaware River when the completed fireboat met this speed test.

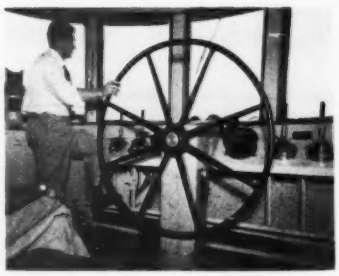
The vessel is powered by two 660 horsepower Fairbanks-Morse diesel engines and has two other similar engines for independent pump service. The fire fighting system features a pair of 6,250 gpm Fairbanks-Morse centrifugal fire pumps with discharge pressure of 150 pounds. There are four monitors: one forward, one aft, one on top of the pilot house, and one on a 20-foot tower above the deckhouse roof. In addition, a special manifold was provided on deck with swivel ells and valves for ten 3½-in. hoses. The fire pumps are piped to permit series operation so that pressure can be raised to 300 pounds.

A rotary pump is provided to make delivery of foam fully automatic. Four hydrants just forward of the pilot house are connected with the foam supply system.

Quarters are provided for eight men in the forecastle and for a ninth man in the deckhouse. In addition to the pilot house, there is a combination lounge, galley and messroom and washroom. The lounge includes an electric refrigerator, electric stove, sink, drinking fountain, transom seats and armchairs.

(*Right*) A Baltimore Fire Captain mans the tower monitor.





(*Above, left*) Pilot house of the fireboat is equipped with RCA radar, Motorola two-way radio, air brake engine controls, and steering gear which provides automatic and instant hand steering in the event of electric power failure.

The "Mayor Thomas D'Alesandro Jr." will replace the old steamer "Torrent." It is the first fireboat to be purchased by the City of Baltimore since 1921. During its test, the vessel turned at full speed in a circle just 1½ times her length, and was reduced from full speed to a crash stop in 16 seconds. The engines were delivering full power astern in just 7 seconds.

Aft deck monitor. Note hydrant system in left foreground.

SHOE CORPORATION OF AMERICA

COLUMBUS, OHIO

protects its property *Automatically*... gets better FIRE and BURGLARY protection and...

SAVES $11,000 A YEAR

Innis Road Warehouse
and Factory

We have used ADT Automatic Protection Services in Columbus for twenty years. When we built our new warehouse recently, ADT Protection was "automatically" included in our plans. We believe that it is giving us the best possible protection against fire and burglary, as well as saving us up to $11,000 annually for our two locations.

Gerald Corbett

Gerald Corbett, Insurance Department

Office and Warehouse
North Fourth Street

Mr. Corbett's statement attests the exceptional efficiency and economy of ADT Automatic Protection in helping to assure continuity of operations. Both Columbus properties are protected by combinations of Central Station Sprinkler Supervisory and Waterflow Alarm, Burglar Alarm, and Heating Supervisory Services.

Thousands of business executives from coast to coast express similar satisfaction because they know that ADT Automatic Protection gives greater security for property, profits, and employees' jobs than other methods, *and at less expense.*

May we show you what ADT can do for you?

Whether your premises are old or new, *sprinklered or unsprinklered,* an ADT specialist will be glad to show how combinations of automatic services can protect *your* property. Call our local sales offices if we are listed in your phone book; or write to our Executive Offices.

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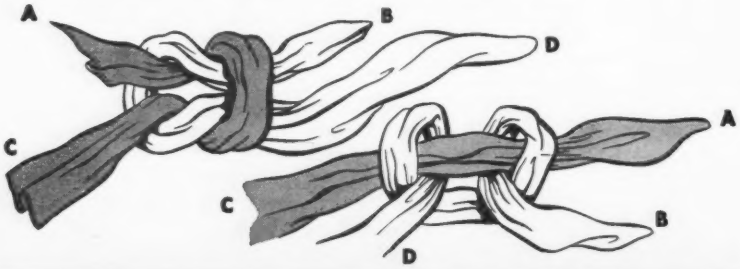
A NATIONWIDE ORGANIZATION
Executive Offices:
155 Sixth Avenue, New York 13, N. Y.

ADT

Visit the ADT Exhibit
Booth 1447
Plant Maintenance and Engineering Show, Cleveland, Ohio
January 28-31, 1957

The Hand is Quicker Than.....

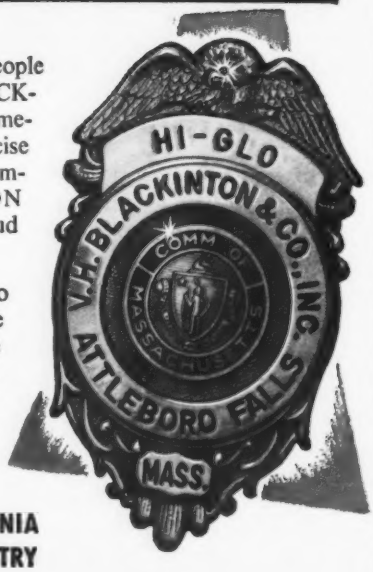
This is the proverbial expression which is proved by this feat of magic. You tie four or five handkerchiefs together and push them thru a tube which is made by rolling a sheet of paper and securing it with rubber bands. The magic happens as the handkerchiefs pass thru the tube — they emerge one at a time — the knots have vanished. THE SECRET? — Tie handkerchiefs with a regulation square knot. Practice tying them until certain you will always get it right, as per illustration. After you tie each knot, take Part C in one hand, end A in the other, pull on each as tho tightening the knot. This "upsets" the knot as shown in second drawing. A very slight pull will slip the two loops free of Part A-C and the knot is untied. When pushing handkerchiefs into tube, you can easily separate them with your fingers. Push them all into tube and shake tube so handkerchiefs will fall out one by one.



But Watch the Eyes Light Up!

That is what will happen when people see that you are wearing a BLACKINTON badge, for they notice immediately the handsome design, precise detail and gleaming finish that combine to make a BLACKINTON badge one that you can be proud to wear.

Ask your equipment supplier to show you the new HI-GLO badge which has a ruby-colored stone hand set in the eye of the eagle. This is the badge with the lifetime finish that you can polish, polish, polish.



BADGES AND UNIFORM INSIGNIA FOR EVERY SERVICE AND INDUSTRY

BLACKINTON

V. H. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

Tips for Apparatus Drivers

IN KEEPING with the safety program recently emphasized by the Chicago, Illinois, Fire Department (see FIREMEN for August 1956), the following information has been distributed to all drivers of apparatus in that Department. It calls attention to minor errors and neglects which lead to serious traffic accidents.

A Few Don'ts in the Interest of Safe Driving

1. Don't accept "off shift" driver's report that apparatus is in proper condition to drive. Officers and personnel must check and test apparatus immediately after reporting on duty.
2. Don't forget to inspect your apparatus often — be good to it — it will be good to you.
3. Don't forget that some people are foolish enough to believe that they can drive under any and all adverse circumstances. Don't you believe it.
4. Don't forget that accidents never "just happen" — they are caused.
5. Don't forget that *good* operators or drivers are *never reckless.*
6. Don't *think* you are good. *Prove it.*
7. Don't forget there are still some fools who take a chance. Don't place yourself in that category.
8. Don't forget that the safety of men riding on the fire apparatus depends on the driver and commanding officer.
9. Don't forget, if you are a Hook and Ladder operator — you have a tillerman. He has a tough or easy job *depending on you.*
10. Don't depend on having the right of way — you may not.
11. Don't take your hands off the steering wheel or look at your officer while driving.
12. Don't engage in unnecessary conversation.
13. Don't forget that car windows of other motorists may be *closed* and that drivers may *not hear* sirens or bells.
14. Don't fail to use caution on wet, slippery or icy pavements.
15. Don't forget, if you skid, turn your steering wheel in the same direction of the skid. Don't throw out clutch. Apply brakes gently — on and off — allowing wheels to revolve.
16. Don't permit the promiscuous use of sirens while responding to alarms. Don't use sirens when converging with other apparatus at the scene of fire or other emergency; and don't fail to reduce speed and proceed cautiously as this is the most dangerous part of the response.
17. Don't forget that a five or ten ton truck will not stop as easily as a pleasure car.

Finally, courtesy and respect to the public while responding to or returning from alarms, or when field officers are making inspections in their various districts, create a good impression and improve public relations for the Fire Department.

A Recent Delivery to Panama

Fire Dept. Officials of discerning judgment select Darley Fire Apparatus for they know Darley gives greater value, because —

We manufacture BOTH Champion Fire Pumps and Champion Fire Apparatus — engineering design, workmanship, materials are to highest standards — top performance is assured through long years of faithful service.

And only Darley gives you a lifetime pump guarantee.

FIVE PUMPERS

The five Darley Champions shown are equipped with 500 gallon Champion Centrifugal Pumps, 200 gallon booster tanks, roomy compartments for equipment, roof ladders, suction hose and the usual fire fighting accessories and tools.

Designed right and built right for dependable performance and long years of service.

65 FOOT AERIAL

Full powered, easy to operate, convenient to maneuver.

A highly efficient fire fighting unit for rescue operations and watertower service.

Full complement of ground ladders including 2 section, roof and pompier ladders, total 402 feet.

Roomy compartments for equipment.

In the market for Fire Apparatus? Write us for the best values.

W. S. DARLEY & CO., Chicago 12

Factories — Chicago and Chippewa Falls, Wis.

Sun-bathing?

It's a swell way to get a tan — BUT it's a helluva way to dry fire hose. In fact . . . drying hose in the sun is the surest way to curtail its life expectancy. The sun bakes in contamination and, just as the sun dries your skin, it removes the natural oils from the cotton fibers and ages the rubber lining.

Hose should ALWAYS be washed after using, then dried with proper hose conditioning equipment.

FIRE HOSE DRYER ➔

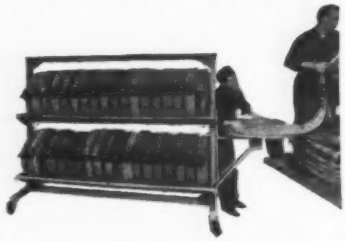
The patented, electrically operated Circul-Air hose dryer circulates prewarmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast — so economical — so easy to use. Circul-Air is the preferred drying method in over 4,000 leading Fire Departments.

ACCEPTED — APPROVED — RECOMMENDED

Approved by Underwriters' Laboratories . . . and Canadian Standards Association. Recommended by all leading fire hose manufacturers.

LABORATORIES APPROVED

PORTO-RAK HOSE STORAGE AND LOADING UNIT



Saves valuable space. Holds 1800 ft. of 2½" hose — proportionately more of 1½" — in an 8 ft. space (when loading table is detached). Roll it right up to the truck for complete hose reload — out of the way when not in use. Equipped with locking fiber-wheeled casters.

NEW *Roto-Jet* HOSE WASHER AUTOMATICALLY WASHES — RINSES — DRAINS HOSE

ROTO-JET Washes, Rinses, Drains hose thoroughly and quickly. Hose is self-propelled. Simple, one man operation. With or without detergents, ashes, dirt, mud and sludge are automatically scrubbed out and flushed away. Saves time. Lengthens hose life. Now . . . with Foot Pedal Operation.

New Booklet (No. 5) "Fire Station Design" Now Available
Send For Your Copy Today

THE CIRCUL-AIR CORPORATION
575 EAST MILWAUKEE
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New Occupancy Fire Record

OCCUPANCY Fire Record 56–6, "Hotels," contains case histories and photographs of fires involving year-round hotels, seasonal hotels and dormitory type and other low rate hotels. Throughout the 24-page 8½ by 11 in. booklet are references to provisions of applicable NFPA Standards. The record also contains summaries of fatal hotel fires in which 10 or more died dating back to 1858. Featured in these fatal fires is the Winecoff Hotel disaster of December 7, 1946, in Atlanta, Ga., where 119 died.

Statistics published in the record and developed through a study of 300 fires in year-round hotels indicated that 25 percent of these fires started in guest rooms. Forty-two percent of the fires were caused by smoking and matches, nearly half of which were smoking in bed and 46 percent of the 300 fires occurred between the hours of midnight and 6 A.M. with 44 percent discovered by employees.

A study of the factors contributing to hotel fire deaths indicated that the most significant were, in order of their importance, no sprinklers, delayed discovery and open stair shafts, elevator shafts and corridors. Similar statistics are published in the record on fires in seasonal hotels.

This important study of hotel fires may be purchased for 50 cents per copy by writing to the NFPA Publications Department, 60 Batterymarch Street, Boston, Massachusetts. Ask for FR 56–6 "Hotels."

Wife — "Been showing the boys that their Chief is still the 'best dad-blamed ladderman in the department,' I see."

Fire Prevention Week Contest

HUNDREDS of entries for the 1956 NFPA Fire Prevention Week Contest arrived at the NFPA Executive Office just before the closing date, November 30. They came from municipalities, industries, military and governmental installations in the U. S. and Canada.

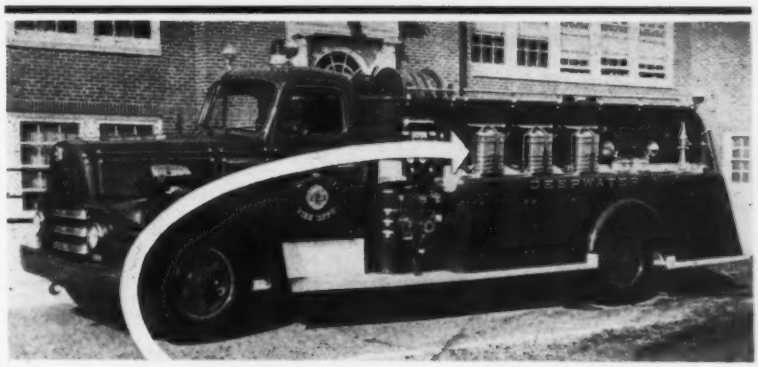
Judges for the Contest will be: A. Leslie Ham, Manager, Dominion Board of Insurance Underwriters; John A. Neale, chief engineer, National Board of Fire Underwriters, and president, National Fire Protection Association; O. E. Ringquist, vice president, Liberty Mutual Fire Insurance Company; Chief Wayne E. Swanson, Rockford (Ill.) Fire Department, and president, International Association of Fire Chiefs; E. C. Wood, president, Imperial Tobacco Company, Canada.

Judging will take place December 17, winners to be named in January.

Award to Volunteer

Wade F. Cripe, of Patterson, California, recently was named "Stanislaus County Volunteer Fireman of the Year." The award was sponsored by the Modesto Insurance Agents' Association and the Stanislaus County Board of Insurance Agents in recognition of the services of the county's 625 volunteer firemen. Fireman Cripe, who has spent 27 years as a volunteer fire fighter, received a $250 bond, a large trophy and two portraits of himself. He is at left, above, with L. I. Bartlett, Earl Damin, president of the Association, and W. W. Giddings, Jr., director, California Association of Insurance Agents.

"For the last time, McAllister, either go on a diet or resign!"



INDIAN

FIRE PUMPS Complete Your Truck Equipment . . .

H. & H. Fire Apparatus Co., of Jersey City, N. J., built the above truck delivered to Deepwater Fire Department, Deepwater, N. J. It is equipped with chrome plated **INDIAN FIRE PUMPS.**

Famous **INDIAN FIRE PUMPS** are standard equipment on more and more new fire trucks. They have no equal for fighting so many types of small fires. They belong on *your* trucks, too.

"THERE IS NOTHING ELSE LIKE THEM"

"We have 6 of your **INDIAN FIRE PUMPS** on one of our fire trucks and we have used them 8 years. They are still **just like new.** They are the best things a fire department can have. I have used them for everything, including grass, house, barn, rubbish and many other kinds of fires. We like them very much. **There is nothing else like them.**"

EARL L. KOCH, Assistant Chief,
Ann Arbor TWP F. D.,
Ann Arbor, Mich.

No. 90
SLIDING PUMP TYPE
INDIAN FIRE PUMP

INDIAN FIRE PUMPS are approved by UNDERWRITERS' LABORATORIES

No. 80
LEVER TYPE PUMP and Handle
INDIAN FIRE PUMP

For all Class A fires and many Class B fires. Fire Chiefs say **INDIANS** are "worth their weight in gold."

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Bison Hardware Co., Toronto

better than ever-

When the FEDERAL STL Siren was introduced, new features made it the outstanding alarm siren. Continued study and experiment have lead to further improvements and now the FEDERAL STH-10, just introduced, becomes the best!

The FEDERAL STH includes all the advanced features of its forerunner, the FEDERAL STL, but produces a better and more contrasting pitch, more sound output, with more simplified construction.

Priced only slightly above conventional sirens, its roof or pole mounting assembly has reduced the total installation cost to no more than conventional units. Now, during the season of greatest fire hazard growing communities need better sirens for fire or disaster warnings! Replace or supplement your inadequate siren with the big New FEDERAL STH-10 Siren, the very best! Write for catalog 200.

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8717 S. State St., Chicago 19, Ill.

for your fire station library!

A Selection of Fire Department Terminology

Second edition — clothbound — 44 pages — 5½ by 8½ inches

Here's a useful book containing nearly 1,000 words and terms of interest to the fire service. It is a valuable guide for "rookies" in fire departments and good reference for other persons interested in the origin and meaning of fire service "lingo."

Order Form FB12

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Please send me.....copies of "Fire Department Terminology"

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Address.....

City..... State.....

☐ Check for $..... enclosed ☐ Please send bill

$2.00 per copy

New Members in NFPA

NFPA welcomes the following fire chiefs and fire departments who recently enrolled in the Association. Currently 2,279 fire departments are receiving the benefits of such membership and 27,139 fire fighters are subscribing to FIREMEN magazine. Additional subscriptions to individual NFPA members in industry bring monthly circulation to nearly 30,000.

Indiana: South Bend Fire Department, South Bend.

Kentucky: McMahan Center Volunteer Fire Department, Louisville.

North Carolina: New Bern Fire Department, New Bern.

Nova Scotia: Chief Kenneth MacDonald, Baddeck Fire Department, Baddeck.

Oklahoma: Vinita Fire Department, Vinita.

Texas: Midland Fire Department, Midland.

Washington: Edgewood Fire Department, P.C.F.D. No. 8, Puyallup; Douglas County Fire Protection District No. 2, Wenatchee.

Wisconsin: Elm Grove Volunteer Fire Department, Elm Grove.

IAFC Committee

DURING the 83rd IAFC Conference the Board of Directors established a permanent committee to represent the volunteer fire departments of the United States and Canada. It will be concerned with the problems and desire for improvement which the volunteers may wish to have covered through the IAFC.

Members of the committee were appointed to represent geographical areas. Donald Holbrook, Chief of the Meadowood, New Hampshire, Fire Department (see FIREMEN for September, 1956), was elected chairman of the committee. Chief Donald S. Charles, of Charlotte, North Carolina, 1st Vice President of the IAFC is Advisory Chairman.

Other members are: Chief P. N. Cranford, Conroe, Texas; Chief J. L. Grote, Chester, Connecticut; Russell D. Salak, Nebraska State Volunteer Firemen's Association; Chief Ivan I. Pierson, McMinnville, Oregon; Chief Alan Clark, Lakefield, Ontario; Chief C. Adena, Grand Rapids, Michigan; and Chief R. Bogart, Elizabethtown, Kentucky.

Five Mack pumpers recently delivered to New Orleans are shown lined up in Eads Plaza at the foot of famed Canal Street. These new type B-95, 1000 GPM units are just five more reasons why Fire Department Superintendent Howard L. Dey considers his Macks . . .

best in the department

Protecting the famous French Quarter in the heart of downtown New Orleans poses a tough problem. In this picturesque section the streets are very narrow and many of the buildings, though well preserved, are hundreds of years old.

As far as Superintendent Dey is concerned, Macks are the best answer. "Their performance has been excellent . . . Macks are the easiest to operate . . . simplest to maneuver in narrow streets . . . completely dependable for our tough fire protection problem."

Your fire protection problem may differ from New Orleans', but every department has its own hazards to face. So the next time you buy, choose Macks for the extra assurance you get with apparatus that's built without compromise on design or quality of components. Mack Fire Apparatus, Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd.

MACK

first name for

FIRE APPARATUS

COMPLETE LINE OF PUMPERS—500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . 65', 75', 85' AERIALS . . . COMBINATION LADDER TRUCKS

4195

MIDWESTERN

Safety Clothing **for FIREMEN**

The Original STRIPED SAFETY COAT

- ★ New Yellow Rubber Stripes!
- ★ Maximum Visibility!
- ★ Maximum Durability!
- ★ Exclusive Safety Features!

YOU deserve the BEST PROTECTION OBTAINABLE for your hazardous work of protecting life and property against fire. The Mackinaw Safety Coat with new yellow stripes is the answer! Highly visible stripes are rubberized as part of the material . . . not painted, glued or sewed on. There is no substitute for the superior quality, design, fabric texture and safety features you get by specifying MIDWESTERN!

QUALITY UNEXCELLED

For complete information on our full line of safety clothing for firemen, see your Midwestern dealer. A letter to the factory will also bring you literature and materials for your inspection.

MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Safety Coats**

HELMETS

BY

CAIRNS

LEATHER
ALUMINUM
FLINT-FLEX

REGULATION
and
OTHER STYLES

SINCE 1836

We can supply everything the fireman needs for his personal equipment. Write for Catalog 350.

CAIRNS & BRO., INC. - Allwood, Clifton, N. J.

First Aid and Resuscitation

(*Continued from page 14*)

It is also suggested that neighboring communities arrange training schedules so that two or more groups may receive training at the same time. Another possibility is to train an instructor within the department — any person who holds a card for both Standard and Advanced First Aid is eligible. Again the local Red Cross Chapter or State Director can help to arrange an Instructor's Course.

Once instruction has begun it will become apparent that some personnel are more interested in the subject, and show more aptitude than others. It would be to the advantage of small town departments to encourage these men to take Advanced First Aid training and to become skilled in the use of the resuscitator. This group does not have to be large, nor does it need any special designation, *i.e.*, Rescue Squad. However, such a plan assures the Chief of having one or two men on any call who can take charge if First Aid or resuscitation problems arise.

Once a group has received and passed Red Cross training, review is easy. Regulations state that in order to keep an active status the course should be reviewed every three years. In a fire department this may be done in piecemeal fashion, that is, by holding periodic drills so that a total of 18 hours (standard) are logged within a 3-year period. Fire officers should keep a record of the classes, instruction given and personnel attending.

The problem of mechanical resuscitator training is not handled so easily. Not long ago the mechanical breathing machine was "just about as dangerous at one end as it was the other." It demanded carefully trained personnel to operate it, and the consequences of improper operation were a dead or badly injured patient.

The present machines, in general, demand just as careful operation, as well as a knowledge of the whole procedure of artificial respiration, but present resuscitators are less complicated and less likely to give mechanical difficulties. It should be emphasized that the mechanical resuscitator is only a supplement to proper manual artificial resuscita-

tion. These cardinal principles apply always:

1. When a patient's respirations have stopped, resuscitation must be started as soon as humanly possible. *Do not wait for mechanical resuscitator.*

2. A good airway to the victim's lungs must be maintained regardless of whether the manual method, or a machine, is being employed.

3. Every person who may be called upon to use a mechanical resuscitator should have a thorough knowledge of first aid and manual resuscitation.

Unfortunately there has been no uniform detailed policy by the Red Cross, or any medical group regarding the use of mechanical resuscitators. Until recently there has been no real need for such policy, since mechanical instruments were used only by a small number of groups. Some of the larger fire departments, state police, occasional utility companies, were the only organizations which had resuscitators and/or inhalators.

Today this is no longer true. To further confuse the issue, the Council on Physical Medicine of the American Medical Association no longer publishes a list of acceptable machines.

Accordingly, it is my sincere hope that the Red Cross will incorporate soon, perhaps as a part of the Advanced Course, training in the operation and use of resuscitators.

In the meantime, the purchase of resuscitation equipment, instruction in its use, and policy of review is in the hands of the local fire department, with no definite outline of procedure by which to be guided. The small community fire department would do well to follow these recommendations:

Before purchasing a resuscitator, contact several larger communities for their experiences with various pieces of equipment. At the same time ask for some detail regarding their training program.

Insist that the company supplying the resuscitator send a factory representative periodically (at least twice a year) to review and check the machine's operation.

Make manual resuscitation and machine operation a part of company drill at least every two months — preferably every month.

If a local physician can be secured to aid in instruction so much the better, provided he will take time to familiarize himself with Red Cross resuscitative procedure, and the operation of the machine.

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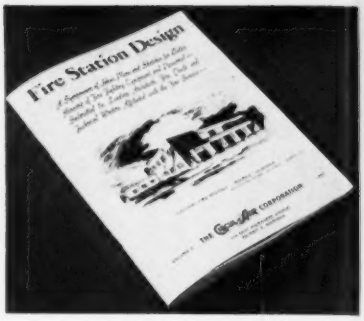

"Fire Station Design"

CIRCUL-AIR Corporation, 575 E. Milwaukee Avenue, Detroit 2, Michigan, has announced that Volume 5, the 1956 edition of "Fire Station Design" is now available. This popular 8½ x 11-inch brochure is a 64-page book containing floor plans, descriptive data and photos of approximately 100 recently built fire stations. The various photos and designs represent many types of fire stations, from single-engine companies to headquarters buildings.

The Corporation announces that "Fire Station Design" will be mailed on request free of charge to fire chiefs, fire commissioners, city officers, rating bureaus, insurance underwriters, architects, colleges and universities. Persons who are not in the fire service may purchase copies for $1.25 each by writing to the Corporation at the above address.

Fire Prevention Calendar

ORDERS for the 1957 Sparky fire prevention calendar are now being filled. Readers wishing to purchase quantities of the 12- by 16-in. illustrated sheet may do so by writing to the NFPA Publications Department. Quantity prices are: $1.00 for 12 copies; $5.00 for 100 copies and $35.00 for 1,000 copies. Greater discounts are given for larger quantity purchases.

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Rockwood Double-Strength FOAM applied with a Rockwood FW Eductor fights flammable liquid and other fires of the same type fast and sure. Three parts mixed with 97 parts water forms a solid FOAM blanket that quickly reseals itself. The Rockwood Eductor with the new FW metering check valve and the Type SG60 nozzle applying the FOAM make short work of fire.

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The Variable FW Metering Check Valve on the Rockwood Eductor is highly versatile (standard equipment). Both are incorporated in a single unit. Material is metered into the hose line in any proportion from 1% through 6%.

News Items and New Equipment of Interest to the Fire Service

Automatic Fire Detector System

Standard Alarm and Signal Company, Berkeley Heights, New Jersey, is distributing automatic fire detector systems for use in homes, schools, institutions and other occupancies. Known as "Model SS-56" and "Model SYS-56" the units feature detectors which operate at 136 degrees Fahrenheit and 174 degrees Fahrenheit. "Model SGS-56" is designed for use with ¼-inch aluminum tubing attached to the outside of the building. According to the manufacturer, the average size home of five or six rooms requires 75 feet of tubing and three detectors. The two units also feature a brass-reed horn which produces 102 decibels of sound for twenty minutes. Both devices recently were listed by Underwriters' Laboratories, Inc., Chicago, Illinois. For full information and descriptive literature, write to the manufacturer at the above address.

Novel "Travel-Desk"

This unit is designed to provide a method of writing comfortably in a car or truck. Manufactured by General Industrial Company, 5738 N. Elston Avenue, Chicago 30, Illinois, the "Travel-Desk" features a 6¼ x 10-inch metal clip board which can be attached under the dash without drilling. The desk swings out and back to position easily. A thick pad of paper and a mechanical magnetic pencil are included free of charge with each $3.75 unit. Write to the manufacturer.

Communications Equipment Catalog

A colorful 8½ by 11-inch illustrated catalog has been published by Audio Equipment Company, Inc., 805 Middle Neck Road, Great Neck, New York. It describes the full complement of the Company's voice communication systems for Civil Defense including the "Audio Hailer" powered portable megaphone, public address systems, and other units. Equipment described has been approved for FCDA matching funds and are available only to qualified Civil Defense authorities. Copies of the catalog and additional information may be obtained by writing to the Company.

Electric Hand Lamp

U-C Lite Manufacturing Company, 1050 W. Hubbard Street, Chicago 22, Illinois, is manufacturing this explosion-proof electric hand lantern. Known as "Model 287EX" of the Big Beam line, it has been listed by Underwriters' Laboratories for Class 1, Group D hazardous locations. It holds two standard 6-volt lantern batteries and operates on one or both. The lantern features a spark-proof case and spring bulb ejection. The container and head are of drawn brass and finished in red baked enamel. The handle is die cast zinc. Descriptive literature may be obtained by writing to the manufacturer.

Keep up to date on the hazards of modern chemicals. Add "Fire Protection for Chemicals" to your library, 152 pages, clothbound, $3.00, available from *NFPA*, 60 Batterymarch St., Boston 10, Mass. . . . More and more departments are installing the high-pressure air compressors to keep "Air-Pak" cylinders always ready for instant use. Get free catalog from *The Cornelius Company*, 550 39th Avenue N.E., Minneapolis 21, Minnesota. . . . Your orders at the fire can be heard through the "Audio Hailer," a portable, battery-operated megaphone. For descriptive folder or demonstration, write to *Audio Equipment Co., Inc.*, 805 Middle Neck Rd., Great Neck, L. I., N. Y. . . . A valued gift for any fire fighter is the "Axe of Recognition" tie clip made by a fireman. Order direct from *Ray Klemm*, 1032 Malzahn St., Saginaw, Michigan. . . . Rescue and first aid personnel can purchase cots and stretcher units to fit any vehicle, industrial first aid stations and plant hospitals. Write for complete catalog to *Washington Products Co.*, 238 South Fayette St., Washington Court House, Ohio. . . . To dress lightly, have more freedom and yet be warm in cold weather, check into "Allen-A Insulaire" undershirts and drawers made with the Navy's arctic fabric. Write to *The Allen-A Co.*, Dept. F., Piqua, Ohio.

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Fire Protection For Chemicals

A new book by Charles W. Bahme*

5⅜ by 8¾ in., 152 pages, $3.00 per copy

This valuable contribution to the fire fighting service discusses many important points of safe handling and storage of chemicals. Mr. Bahme compiled the material for class instruction in fire protection engineering and for training of members of the fire service charged with safeguarding life and property against fire and explosion hazards of dangerous chemicals. The book should also be a valuable reference for industries concerned with manufacture, storage, and transportation of chemicals, fire prevention authorities and others concerned with life and property safety.

Easy-to-read sections of book discuss the principal hazards of various chemical substances and emergency action and fire fighting to be followed when the chemicals are involved. It was published originally in six parts in the NFPA Quarterly beginning April 1952 and ending January 1956.

This is a "natural" for fire station libraries and for fire fighters everywhere who want practical information on fighting fires that involve chemicals.

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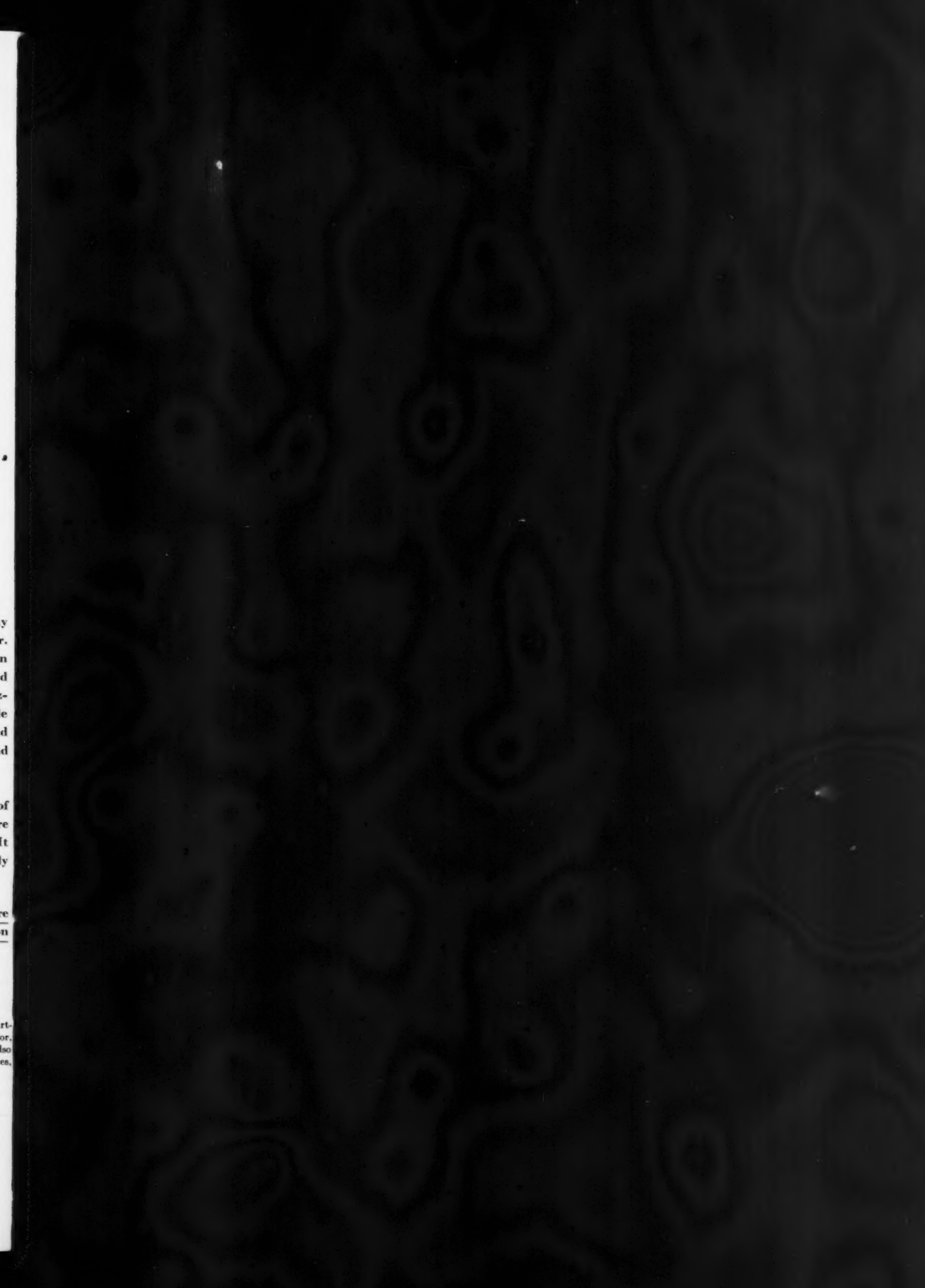
*Battalion Chief Bahme has been a member of the Los Angeles Fire Department for more than 17 years. He has served as a fire fighter, fire inspector, arson investigator and now heads the Public Relations Bureau. He is also a personal member of the NFPA Committee on Chemicals and Explosives, and is an attorney with membership in the California Bar Association.

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